

TEDDY

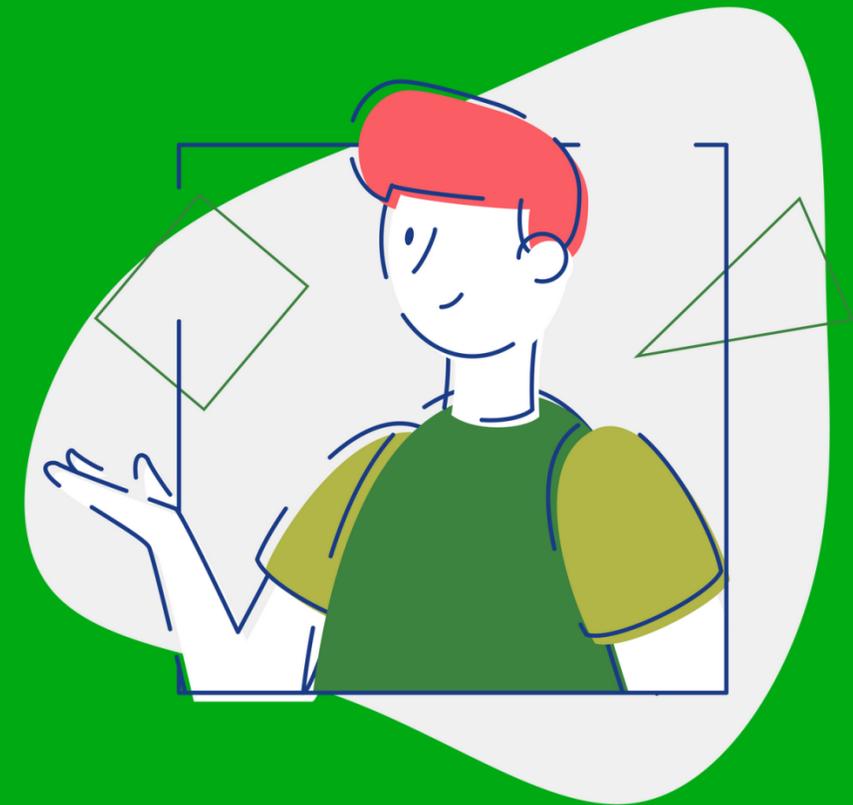
Project funded by Erasmus+

2021

Toolkit for digital skills in the classroom

Developed by

TEDDY: Teacher's Experiential Development of Digital skills through the Young innovator's program



Index

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Introduction

Glossary

Tools for: Designing Visual Materials

Tools for: Fostering Classroom Interaction

Tips for: Inclusive Digital Learning

Tools for: System Analysis & Design Process

Tools for: Digital Climate Change Education

Tips for: Critical Digital Literacy

Tips for: Connecting with your Students



Introduction

Digital skills in education

When the Covid-19 pandemic took the world by storm at the beginning of 2020, teachers around the world were asked to quickly digitize their classes. This transition to digital education was paired with newfound challenges and opportunities. While many teachers struggled with keeping their students engaged in their virtual classrooms, some teachers were inventive and reached for new tools and developed new skills. Through these efforts, their education incorporated the advantages of digitalization such as creating engaging content or facilitating participation and collaboration.

Following the end of the pandemic, the EU wants to take the rebuilding of society as an opportunity to realize a smart and green recovery. This requires investments into sustainable and digital innovations. In an effort to combine these aspirations, the TEDDY project was started. Together, four European climate change educational organizations aim apply the advantages of digital education to their programs as we move back to traditional classroom education. The project started with an inventorization of the tools and skills that teachers used during the pandemic as well as their needs for further guidance.

This toolkit provides an overview of the tools and skills for teachers who want to reap the benefits of digital education. It offers guidance for which tools to use for key educational practices. This menu of tools is complemented with step-by-step instructions on how to use the tools as well as tips on what to pay attention to. The toolkit focuses on two frequently used pedagogical practices; fostering interaction between students and designing original content. To facilitate your understanding of these tools, this toolkit contains comics pointing out good practices and exercises to apply the lessons learned.

The tools and tips presented throughout this toolkit are those we deemed most applicable to climate change education as well as other subject areas based on our research and personal experience. We sincerely hope they help you to incorporate the possibilities of digital education.

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Participating Organizations

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Stichting Technotrend: A Dutch non-profit organisation, working on sustainability through technology education. Primary and secondary schools are the main target groups. Energy transition, circular economy, climate adaptation and the UN's Sustainable Development Goals are the main topics of the many education programmes of the foundation.

2811: A social change platform, based in Germany. On November 28 (28/11), 2015, Chile for the first time became a technically unsustainable country, according to The Footprint Network indicator. Since that year, the founders of 2811, Waldo Soto and Gabriela Carrasco, Chileans, decided to try to reverse this trend by installing social change and climate action methodologies in the education system, universities and colleges. Today 2811 is a global platform for social innovation, working on projects in Europe, North America and South America.

Solutions for the Planet: An award-winning social enterprise that has been operating for eight years in the space of environmental entrepreneurship, education and green innovation. Since 2013, their flagship initiative, the Big Ideas programme, has involved over 20,000 students from more than 50 schools to support young people in developing their confidence, ideas, skills and knowledge around STEM, sustainability and entrepreneurship.

AESS: An energy agency based in Modena, Italy founded in 1999. It is a non profit organisation providing consultancy, professional training and other services in the field of sustainability and energy in particular. Its main target are local authorities. Apart from strictly technical support, AESS supports municipalities in setting up their energy and mobility planning strategies.

Erasmus+: The EU's programme to support education, training, youth and sport in Europe. It has an estimated budget of €26.2 billion. The 2021-2027 programme places a strong focus on social inclusion, the green and digital transitions, and promoting young people's participation in democratic life.

Glossary

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Toolkit: The toolkit is a document set of tools. In simple words, it is a document that educates and amplifies the knowledge on certain topic through entertaining and visual materials. It also provides a roadmap on how to put that knowledge into action, underscoring what needs to be done, when and how.

Digitization vs. Digitalization: While digitization is the conversion of analog to digital, digitalization uses digital data in a meaningful way through technology. Consequently, we can safely state that digitalization cannot happen without digitization.

Digital skills: Skills needed to use digital devices, communication applications, and networks to access and manage information.

Climate action: Climate action is any policy, measure, or program aimed at reducing greenhouse gases, building resilience to climate change, or supporting and financing those goals.

System Innovation: An approach aimed at solving complex problems through the introduction of innovations that lead to lasting results. In this approach, students observe the system and the network of interrelations that create complex problems, obtaining a broader perspective that allows them to reflect on the challenges and potential solutions.

Inclusive learning spaces: Inclusive learning space design should be based on a tripartite framework addressing the diverse physiological, cognitive, and cultural needs of learners.

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Safe space: A place or environment in which a person or category of people can feel confident that they will not be exposed to discrimination, criticism, harassment, or any other emotional or physical harm.

Project-based learning: A pedagogical method that actively engages students in their learning by asking them to investigate the answer to a real-world question or problem and then create a concrete solution. Throughout this process, the school community reflects on what, how and why they are learning. Finally, students present their projects to an audience.

Challenge-based learning: In challenge-based learning, as in problem-based learning, the teacher both provides information and guides the construction of knowledge by their students around a specific problem. The methodology combines project-based learning with the definition of a specific challenge, which usually comes from an industry, a local NGO, a government or a global organization. A good challenge is concrete, immediate, achievable and generates enthusiasm.

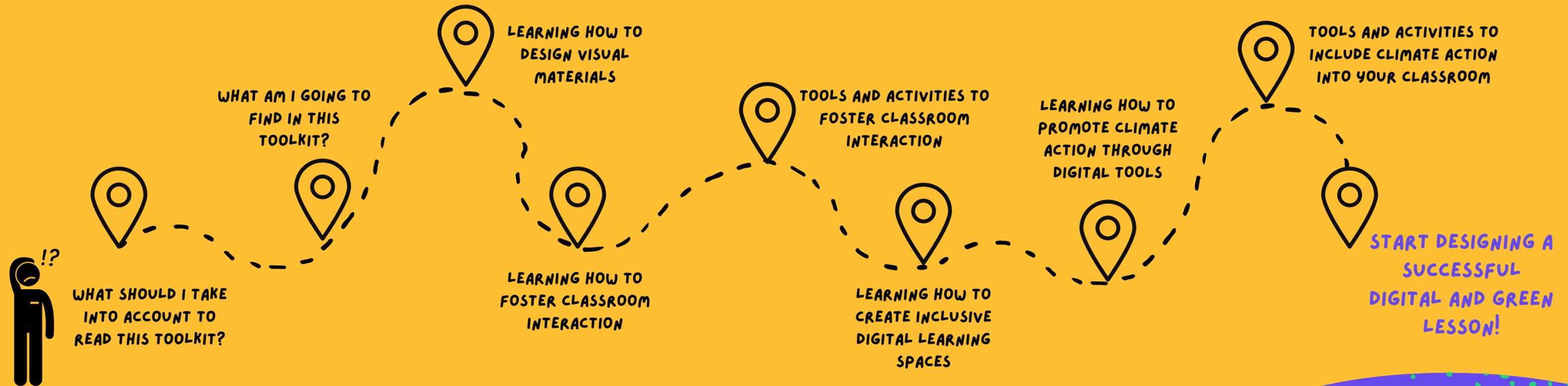
Learning by doing: A practical approach in which teaching and learning are based on the reality of the student experience, developing the autonomy and independence of the student.

Systems thinking: A holistic way of seeing and understanding the dynamics of complex problems and how they are embedded in a system.

Toolkit Learning Journey

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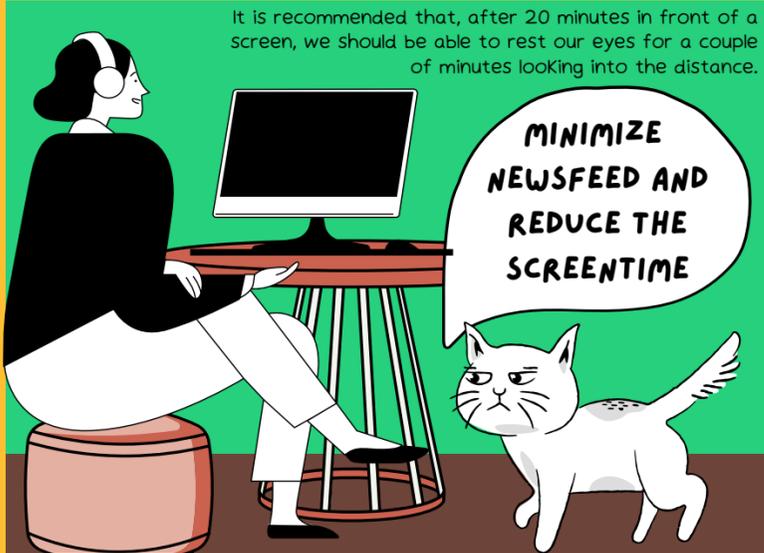
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BEFORE WE START...

LEARN ABOUT THESE HEALTHY ROUTINES ABOUT ONLINE WORKING ENVIRONMENTS

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DESIGNING VISUAL MATERIALS

DESCRIPTION

Canva is an online design and publishing tool with a mission to empower everyone in the world to design anything and publish anywhere.

Whether you're a teacher or student, Canva for Education makes it easy to create, collaborate, and communicate visually in the classroom and beyond. It's 100% free for K12 teachers and their students.

YOU CAN CREATE...

- POSTERS
- PRESENTATIONS
- CERTIFICATIONS
- VIDEOS
- TICKETS
- COMICS
- LOGOS
- SOCIAL MEDIA POSTS

LINKS

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HOW TO VIDEO



DESCRIPTION

Record quick videos of your screen and cam. An essential tool for hybrid workplaces. Useful for team-alignments, design. product management, content production, tutorials, training, team-building, feedback loops....

YOU CAN CREATE...

- VIDEOS
- SCREENSHOTS
- TUTORIALS
- ASYNCHRONOUS LESSON CONTENT



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FOSTERING CLASSROOM INTERACTION

DESCRIPTION

Mentimeter is a platform to use live polls, quizzes, word clouds, Q&As and more to get real-time input - regardless if you're remote, hybrid or face-to-face.

To prepare: Build interactive presentations with the easy-to-use online editor. Add questions, polls, quizzes, slides, images, gifs and more to your presentation to create fun and engaging presentations.

To engage: Your audience uses their smartphones to connect to the presentation where they can answer questions. Visualize their responses in real-time to create a fun and interactive experience.

To follow-up: Once your Mentimeter presentation is over, share and export your results for further analysis and even compare data over time to measure the progress of your audience.'

YOU CAN CREATE...

- QUIZES
- POLLS
- GAMES
- PRESENTATIONS
- SURVEYS

LINKS

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HOW TO VIDEO



DESCRIPTION

Padlet is a versatile and intuitive virtual post board that can be shared with your students either in class or as an extension to their learning. Students and teachers can collaborate, discuss and share links and pictures amongst each other in the one shared space.

YOU CAN CREATE...

- DISCUSSION BOARD
- BULLETIN BOARD
- SHOW AND TELL
- TIMELINE
- MAP
- BOARD TO GET TO KNOW EACH OTHER
- DISPLAYS OF STUDENTS' WORK
- DEBATE
- SCAVENGER HUNT
- BOOKSHELF
- POLL

LINKS

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DESCRIPTION

Miro is a platform for modern work, enabling collocated, distributed, and remote teams to communicate and collaborate across formats, tools, channels, and time zones – without the constraints of physical location, meeting space, and whiteboard.

YOU CAN CREATE...

- DIFFERENT WORKING VIRTUAL SPACES
- SHARED VIRTUAL WHITEBOARDS
- BRAINSTORMS
- IDEATION
- REPORTING
- EVALUATIONS

LINKS

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HOW TO VIDEO



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INCLUSIVE DIGITAL LEARNING SPACES

INCLUSIVE DIGITAL LEARNING SPACES

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1. SET EXPLICIT COMMUNITY EXPECTATIONS

- ASK YOUR STUDENTS WHAT THEIR NEEDS AND PREFERENCES ARE THROUGH SURVEYS OR OPEN DISCUSSION.
- ESTABLISH A COMMON SET OF PRINCIPLES "BY THE GROUP, FOR THE GROUP."

"WE THE PEOPLE OF THIS CLASSROOM....."

COMMIT TO GENDER INCLUSIVITY....

RESPECTFULLY EXPRESS DIFFERENCE OF OPINION IN OUR DISCUSSIONS...

HONORING EACH OTHER'S DIVERSITY AND VARYING BACKGROUNDS"

MAKING THIS CLASSROOM A SAFE SPACE FOR ALL"

2. MODEL NON-VIOLENT COMMUNICATION

TO BUILD ON ONE ANOTHER'S THOUGHTS AND IDEAS, WE SAY YES, AND., RATHER THAN NO, BUT.....

FEEL FREE TO EXPRESS OUR FEELINGS AND OBSERVATIONS..

INSTEAD OF "BOYS AND GIRLS" OR "LADIES AND GENTLEMEN" TRY "FOLKS" OR "YOU ALL."

DON'T INTERRUPT - LISTEN TO THE SHY KIDS...

"POWER-OVER LEADS TO PUNISHMENT AND VIOLENCE. POWER-WITH LEADS TO COMPASSION AND UNDERSTANDING, AND TO LEARNING MOTIVATED BY REVERENCE FOR LIFE RATHER THAN FEAR, GUILT, SHAME, OR ANGER."

- MARSHALL B. ROSENBERG, PH.D.

CONTENT BY PUDDLEDANCER PRESS. USE OF CONTENT OKAY WITH ATTRIBUTION. PLEASE VISIT WWW.NONVIOLENTCOMMUNICATION.COM TO LEARN MORE ABOUT NONVIOLENT COMMUNICATION.

3. ENSURE ACCESS TO PEOPLE WITH DISABILITIES

BEING THOUGHTFUL ABOUT REQUESTING VIDEO PARTICIPATION AND DO NOT ASSUME A STUDENT'S REASON FOR NOT TURNING ON THEIR CAMERAS.

SUPPORTING VISUAL LEARNERS WITH SLIDESHOWS, PRESENTATIONS, GRAPHS AND IMAGERY.

SENDING YOUR AGENDA AND VISUALS AHEAD OF THE MEETING TO GIVE MORE TIME FOR STUDENTS TO PROCESS.

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Young Innovators System Analysis & Design Process Canvasses

Explore the Challenge

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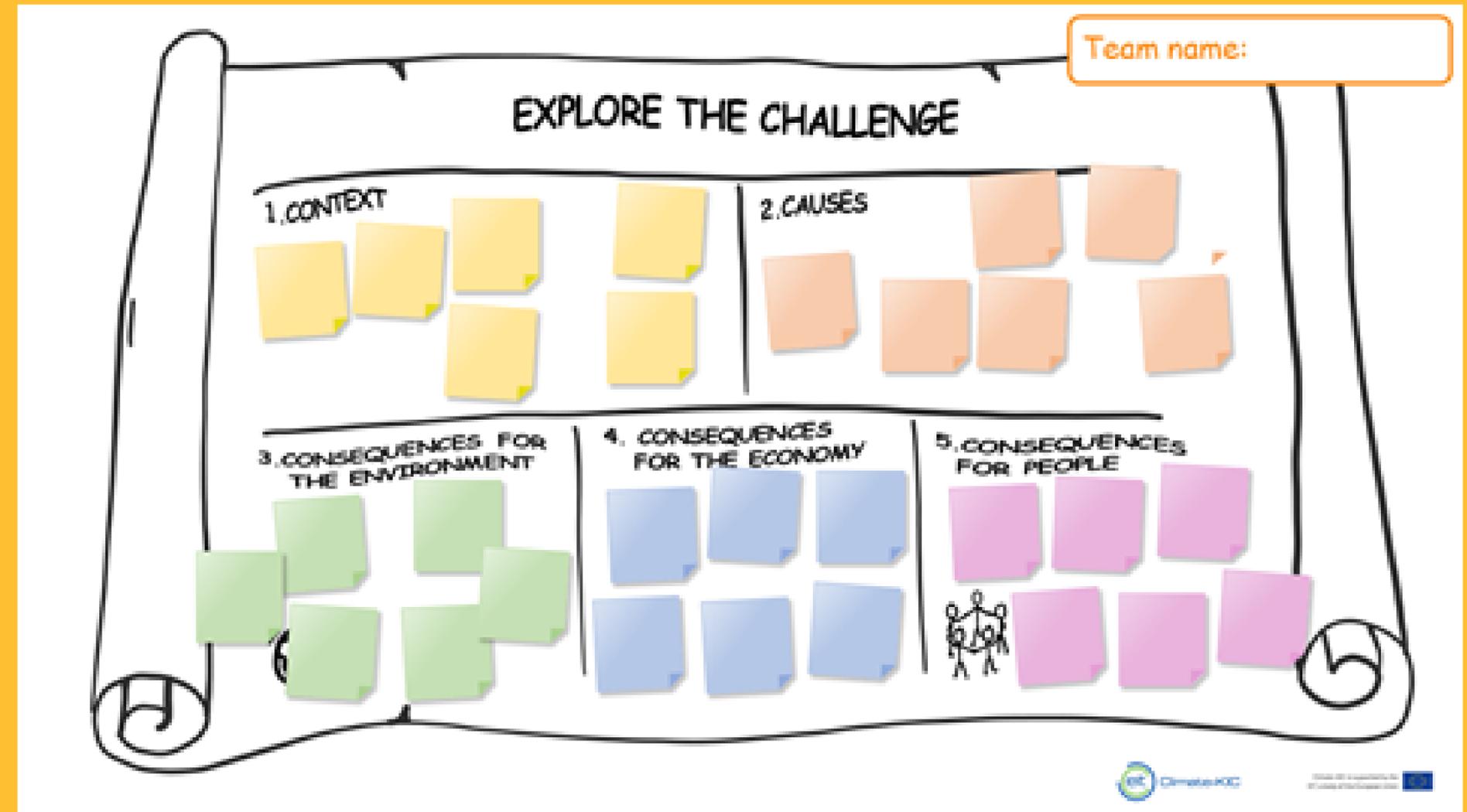
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In order to fully grasp a challenge, the young innovators program employs a system's approach. Here we analyze a problem from various perspectives.

This canvas helps students understand the bigger picture of a challenge as well as the key concepts and how these relate to one another.

We recommend taking approximately 40 minutes to complete this exercise. Take 7 minutes per category: first let the students think for themselves for 3 minutes and then discuss it for the remaining 4 minutes.

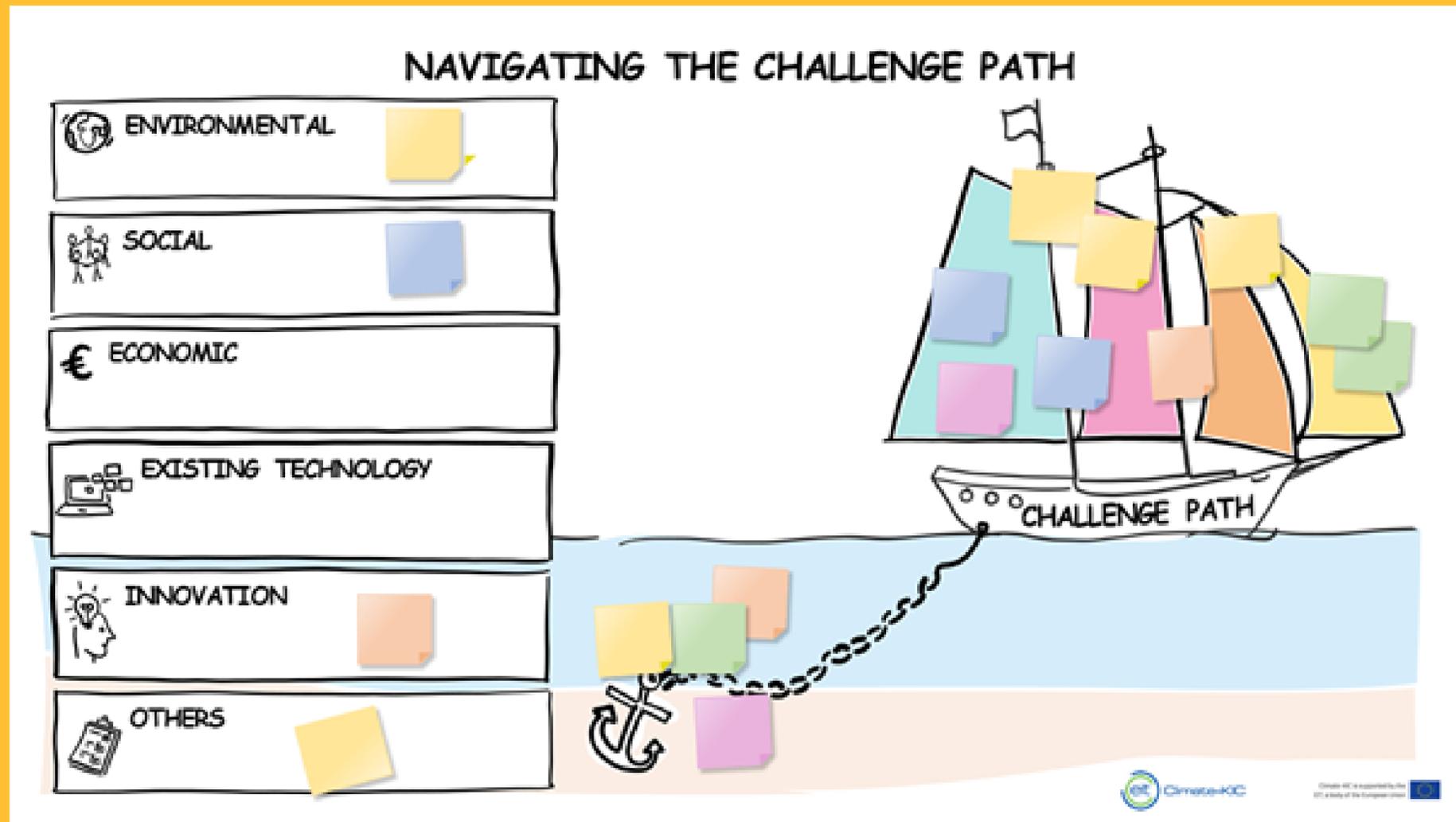
A recurring challenge with this exercise is that students have solutions in mind while describing the challenge. Encourage them to focus solely on the problem so that eventually, when it is time to design a solution, that solution is based on a holistic understanding of the problem.



Navigating the Challenge

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Following the completion of the previous exercise, it is now time to identify opportunities for change. Through the use of this canvas, students are encouraged to reflect on how external factors can influence their challenge paths and how these influences could either be barriers or enablers in their search for a solution.

We recommend taking 25 minutes for this exercise. 5 minutes for each of the first three categories and then 10 minutes for the last three together.

Once your students have identified the relevant external factors, it is time to categorize them according to enablers (sails) or barriers (anchors)

Stakeholders

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The goal of this canvas is to help students get a good sense of who to involve in their challenge for making it a success. Initially, students should think of 4 stakeholders. Two of which should be enthusiasts and two should be skeptical.

Let the students vote on which stakeholders they think are the most important for the success of their solution. The four stakeholders with the most votes will be analyzed more closely.

We recommend taking 35 minutes for this exercise. 5 minutes for each of the first four categories and then 10 minutes for the last one.

DIG DEEPER INTO YOUR STAKEHOLDERS

| WHO? | PAINS & GAINS? | NEEDS? | WILL THEY HELP OR HOLD BACK? | HOW TO GET THEM ON BOARD? |
|------|----------------|--------|------------------------------|---------------------------|
| | | | | |
| | | | | |
| | | | | |
| | | | | |

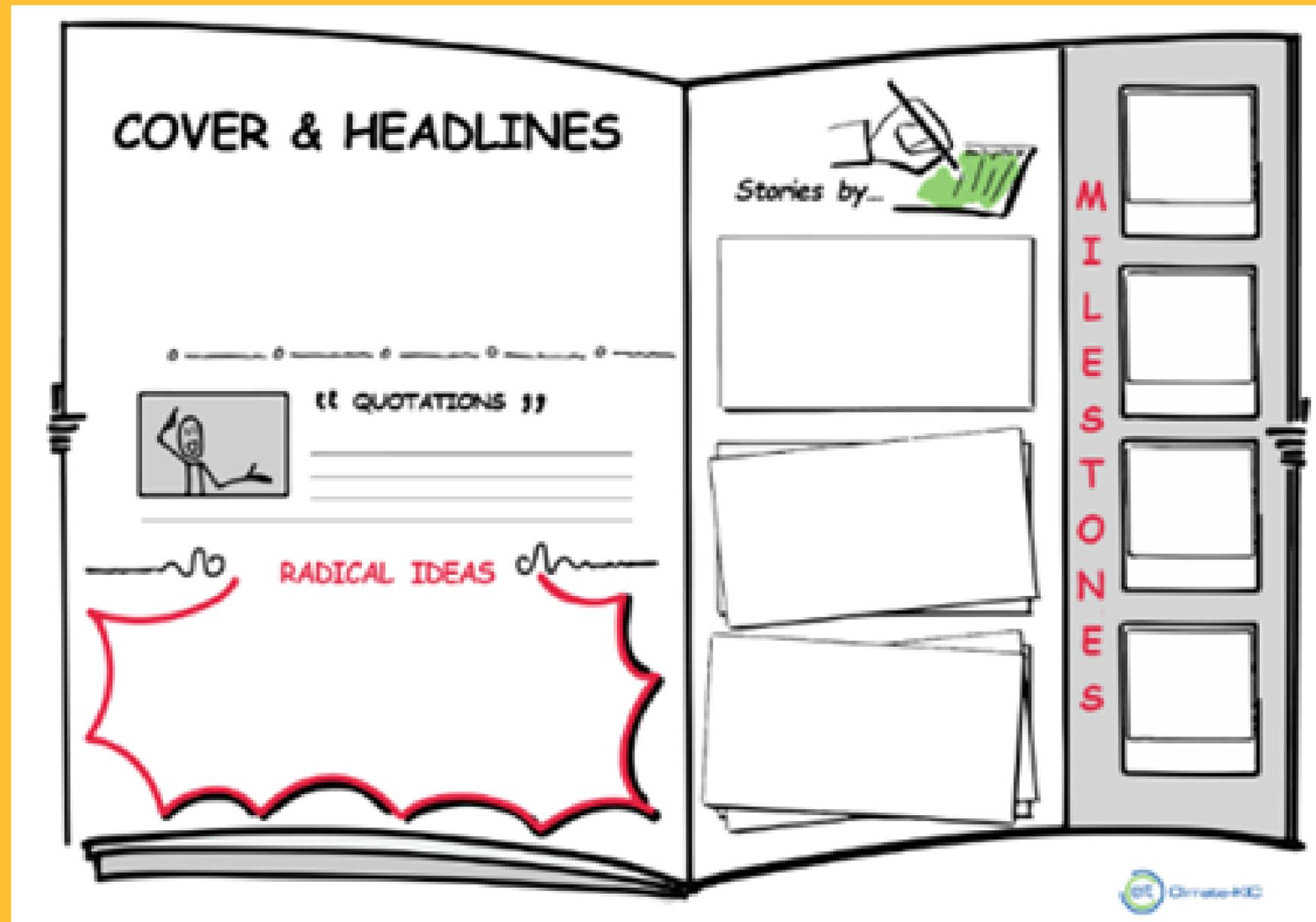


et Climate-KIC Climate-KIC is supported by the EU, a body of the European Union 

The Cover Story

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The time has finally come for the students to choose and develop their unique solution. Teams use the Cover Story to support and define the action plan to sustain their solution.

The various components of this canvas are as follows:

- Headlines: to tell the story of success in just a couple of lines.
- Radical ideas: the ideas underlying the team's innovative solution.
- Quotations: to explain the new scenario around the team's solution/innovation.
- Stories: describe those new, different and significant aspects of the new reality.
- Milestones: To describe the fundamental changes needed to make this new scenario come true.

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CLIMATE CHANGE EDUCATION

New Shores

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DESCRIPTION

New Shores is a game about experimenting with different strategies while negotiating, cooperating or competing with other players who are not always sympathetic to your cause. Free to govern themselves, players can communicate and collaborate - or go through the game without giving much concern to the others. Using coal can dramatically improve the island's development. But what will be the cost? Climate and democracy shouldn't be taken for granted.

YOUR STUDENTS WILL LEARN TO:

- Learn and explore practices that promote sustainability.
- Discover correlation between greenhouse gases and climate change.
- Get a better understanding of the climate change mechanics.
- Practice and gain skills for effective communication and collaboration.
- Develop strategic and leadership skills.
- Learn how to set and align goals, negotiate conditions and coordinate actions.

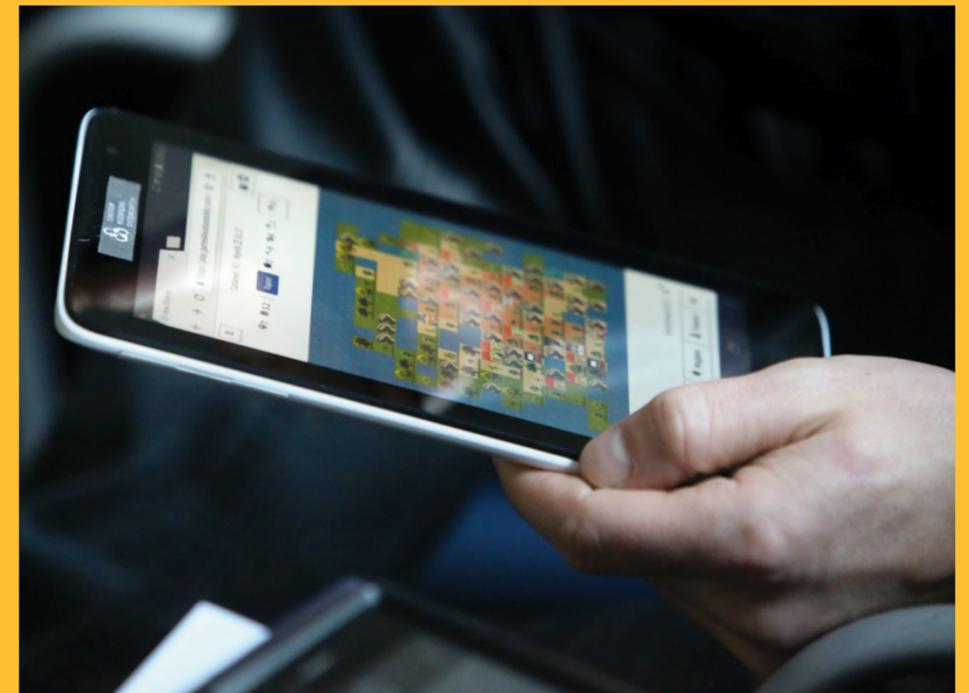
TO PLAY THIS GAME IN YOUR CLASS YOU NEED:

- 1-2 hours
- 8 players or more
- A tablet/computer with internet access for each player

LINKS

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Sea Level Projection Tool

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DESCRIPTION

Under a warming climate, sea levels around the world have been rising and are projected to continue rising in the future. The Intergovernmental Panel on Climate Change (IPCC) is the United Nations body for assessing the science related to climate change. The IPCC was created to provide policymakers with regular scientific assessments on climate change, its implications and potential future risks. The NASA Sea Level Projection Tool allows users to visualize and download the sea level projection data from the IPCC 6th Assessment Report (AR6). The goal of this tool is to provide easy and improved access and visualization to the consensus projections found in the report.

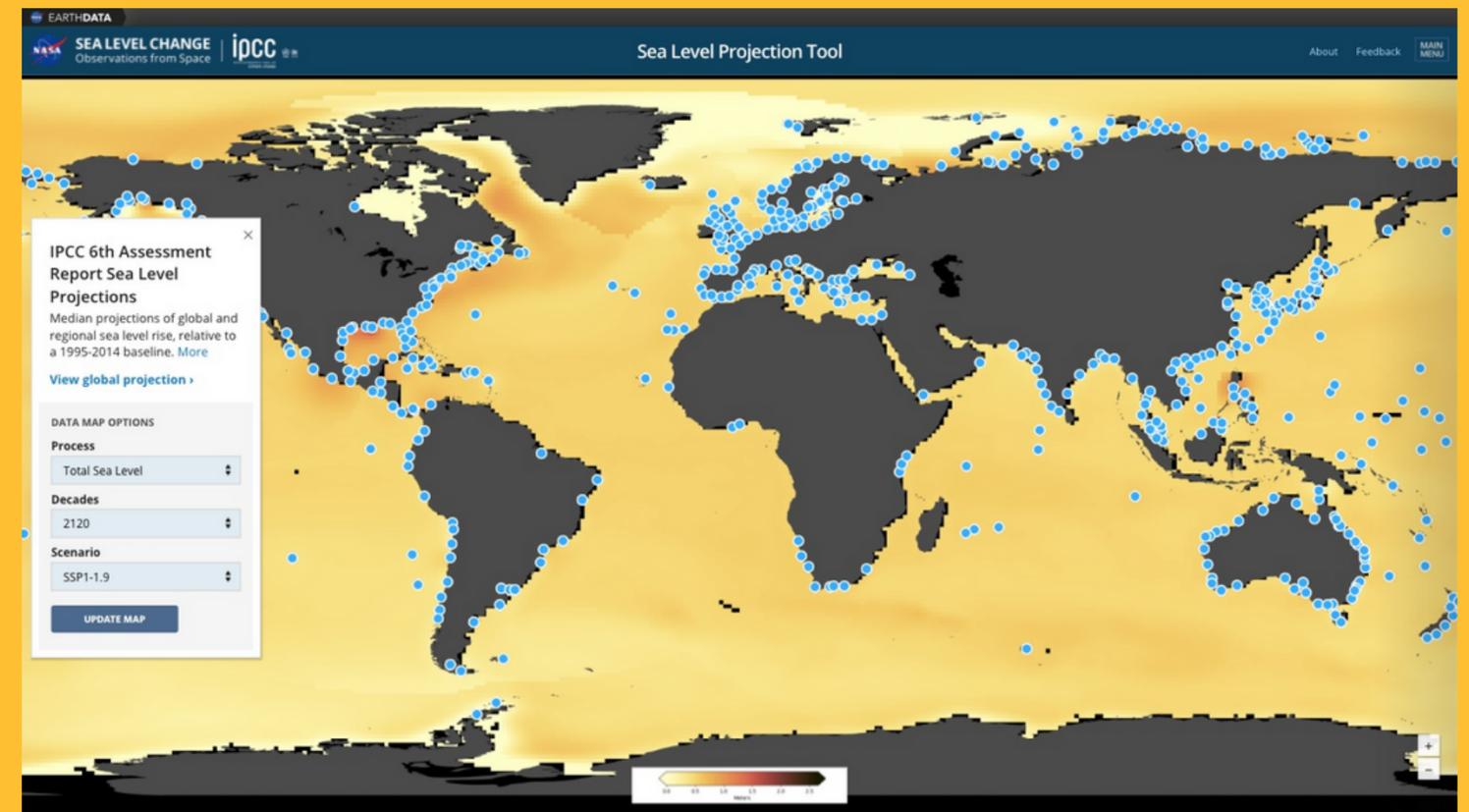
WE RECOMMEND USING THIS TOOL TO:

- Visualize the potential impacts of climate change
- Highlight the differences between different paths of action

LINKS

[TOOL](#)

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Footprint Calculator

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DESCRIPTION

Every year people demand more from nature than it can regenerate. Individuals, communities and government leaders use our data to better manage limited resources, reduce economic risk, and improve well-being. The Footprint measures human demand on nature, expressed as a single, easy-to-understand number that's scalable from an individual to a global level. Our Footprint data and tools empower leaders at the local and national level to make confident policy and investment decisions backed by facts.

YOUR STUDENTS WILL LEARN TO:

- Reflect on how their actions influence the planet
- Consider steps they can take to reduce their impact
- Recognize the relation between welfare and carbon emissions

LINKS

[TOOL](#)

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CRITICAL DIGITAL LITERACY

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DECODING

LEARNERS NEED TO DEVELOP FAMILIARITY WITH THE STRUCTURES AND CONVENTIONS OF DIGITAL MEDIA, SENSITIVITY TO THE DIFFERENT MODES AT WORK WITHIN DIGITAL ARTEFACTS AND CONFIDENT USE OF THE OPERATIONAL FRAMEWORKS WITHIN WHICH THEY EXIST.

MEANING MAKING

THIS RECOGNIZES THE AGENCY OF THE LEARNER AS A PARTICIPANT IN THE CONSTRUCTION OF A TEXT. MAKING MEANING IS A REFLEXIVE PROCESS IN WHICH THE CONTENT, STYLE AND PURPOSE OF THE TEXT IS IN DIALOGUE WITH THE PRIOR EXPERIENCE, KNOWLEDGE AND RESPONSES OF THE READER. MAKING MEANING IMPLIES BOTH UNDERSTANDING AND INTERPRETATION.

ANALYSING

LEARNERS TO DEVELOP THE ABILITY TO MAKE INFORMED JUDGEMENTS AND CHOICES IN THE DIGITAL DOMAIN. THEY ALSO NEED TO BE ABLE TO APPLY CRITICAL, AESTHETIC AND ETHICAL PERSPECTIVES TO THE PRODUCTION AND CONSUMPTION OF DIGITIZED MATERIAL.

PERSONA

SENSITIVITY TO THE ISSUES OF REPUTATION, IDENTITY AND MEMBERSHIP WITHIN DIFFERENT DIGITAL CONTEXTS. THE PURPOSEFUL MANAGEMENT AND CALIBRATION OF ONE'S ONLINE PERSONA. DEVELOPING A SENSE OF BELONGING AND A CONFIDENT PARTICIPANT ROLE.

USING

LEARNERS NEED TO DEVELOP THE ABILITY TO DEPLOY DIGITAL TOOLS APPROPRIATELY AND EFFECTIVELY FOR THE TASK IN HAND. THEY ALSO NEED TO BE ABLE TO SOLVE PRACTICAL PROBLEMS DYNAMICALLY AND FLEXIBLY AS THEY ARISE, USING A RANGE OF METHODS AND APPROACHES, BOTH INDIVIDUALLY AND AS PART OF COMMUNITIES.

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ACTIVITIES TO CONNECT WITH THE STUDENTS

CHECK IN ACTIVITIES



| | TIME | MATERIALS | EXPLANATION |
|-------------------------|-------------------|------------------------|--|
| GO AROUND | 5 MINUTES | NOTHING | THE FACILITATOR WILL PUT THE SONG FOR 4 MINUTES AND THE PARTICIPANTS HAVE TO DRAW WHATEVER IT COMES TO THEIR MIND. THIS DYNAMIC IS AN INVITATION TO FLOW AND FEEL THE MUSIC. |
| SAY, PAINT, SHOW | 10 MINUTES | PAPER & PEN | FEEL YOUR BODY, PART BY PART. CLOSE YOUR EYES, FEEL YOUR FEET, YOUR LEGS, YOUR STOMACH, YOUR CHEST, YOUR ARMS, YOUR HANDS, YOUR NECK...BREATH DEEPLY AND TRY TO BRING IT ALL TOGETHER... |
| EMOJI CHALLENGE | 1 MINUTE | NOTHING | ASK EVERYONE TO THINK OF A TITLE OF A FILM, BOOK OR SONG. ONCE THEY'RE READY, TELL EVERYONE TO DESCRIBE THE TITLE IN THEIR CHAT TOOL USING EMOJIS ONLY. TAKE TURNS GUESSING EACH TITLE DURING A VIDEO CALL. |

WELCOME TO THE PRESENT



| | TIME | MATERIALS | EXPLANATION |
|-----------------|-----------|--|--|
| FEEL IT | 5 MINUTES | SONG: WIGHTLESS MARCONI UNION PAPER & PEN | THE FACILITATOR WILL PUT THE SONG FOR 4 MINUTES AND THE PARTICIPANTS HAVE TO DRAW WHATEVER IT COMES TO THEIR MIND. THIS DYNAMIC IS AN INVITATION TO FLOW AND FEEL THE MUSIC. |
| CONSCIOUS PAUSA | 1 MINUTE | NOTHING | FEEL YOUR BODY, PART BY PART. CLOSE YOUR EYES, FEEL YOUR FEETS, YOUR LEGS, YOUR STOMACH, YOUR CHEST, YOUR ARMS, YOUR HANDS, YOUR NECK....BREATH DEEPLY AND TRY TO BRING IT ALL TOGETHER... |
| SKRETCHING | 1 MINUTE | NOTHING | BREATH DEEPLY, FROM YOUR NOSE, THROUGH THE AIR THROUGH YOUR MOUTH. SKRETCH YOUR NECK, YOUR ARMS, YOUR BACK, YOUR LEGS, YOUR FEETS.... |

ENERGIZERS



| | TIME | MATERIALS | EXPLANATION |
|-------------------|------------------|--|--|
| TOUCH BLUE | 3 MINUTES | SONG: WIGHTLESS MARCONI UNION PAPER & PEN | <p>THE FACILITATOR CALLS OUT SOMETHING TO TOUCH, FOR EXAMPLE: “TOUCH BLUE!” EACH PERSON THEN HAS TO MOVE AND TOUCH SOMETHING WITH THAT COLOUR (A BLUE MARKER, A CO-WORKER WITH A BLUE SHIRT, ETC). THE FACILITATOR CONTINUES, “TOUCH RED... YELLOW... SOMETHING FLUFFY...” FOR THE ADVANCED GROUP, YOU CAN GET MORE COMPLEX: “WITH YOUR LEFT FOOT, TOUCH SOMETHING ON YOUR DESK... WHILE DOING THAT, WITH YOUR RIGHT ELBOW, TOUCH SOMETHING YELLOW...”</p> |
| QUIZ | 8 MINUTES | MENTIMETER PLATFORM (FREE) | <p>ASK QUESTIONS LIKE:</p> <ul style="list-style-type: none">• WHAT'S YOUR MOOD NOW?• WHAT COUNTRY WOULD YOU LIKE TO VISIT?• WHAT ARE THE CLIMATE ACTION HABITS YOU PRACTICE? |

DESIGN YOUR LESSON PLAN



1. DEFINE THE LEARNING OBJECTIVES

2. DECIDE WHICH DIGITAL PLATFORM IS BEST TO ACHIEVE THOSE LEARNING OBJECTIVES

2. PLAY WITH THE TOOL UNTIL YOU HAVE A BASIC UNDERSTANDING

3. PREPARE THE ONLINE WORKING SPACE IN A VISUAL AND CLEAR WAY (YOU CAN ALWAYS USE TEMPLATES)

4. SET UP SOME BASIC RULES IN ORDER TO CREATE A SAFE AND DIDACTIC LEARNING ONLINE. SPACE

5. PREPARE A CHECK IN AND A CHECK OUT

6. IMPLEMENT YOUR LESSON PLAN

7. MAKE AN ANONYMOUS SURVEY TO UNDERSTAND. HOW MUCH DID THEY LEARN, WHICH CHALLENGES THEY HAD REGARDING TH DIGITAL PLAFORM AND SO ON.

LEARN FROM THIS PROCESS AND YOU WILL BE READY TO SUCCESS IN YOUR ONLINE TEACHING!

